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Effective retirement age in the earnings-related pension scheme in 1996 - 2003

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CONTENTS

ABSTRACT

This report includes data on the main indicators describing the effective retirement age in Finland. These are the average, the median and the expected effective retirement age. The indicators have been calculated for all persons having retired on an earnings-related pension for the years 1996-2003. As regards the private sector, the calculations go back to 1983. The recipients of an earnings-related pension constitute about 95 per cent of all retired persons in Finland.

The expected effective retirement age (i.e. the expectancy) is an indicator developed at the Finnish Centre for Pensions, and it is calculated using retirement risks. It meets the requirements set for an indicator describing the effective retirement age, since it reacts to the retirement risk immediately and in the right direction, and it is independent of the age structure of the population.

Looking at the whole Finnish statutory earnings-related pension scheme, the expected effective retirement age has remained fairly stable at about the age of 59 years during the whole period of observation. In 2003 the expectancy was 58.9 years. According to the expectancy, women retire on average about six months later than men.

The expected effective retirement age calculated for 50-year-olds has, for its part, increased by six months between 1996 and 2003. In the expectancy for 50-year-olds there are no differences between men and women.

1. INTRODUCTION

One of the main aims of the Finnish pension policy is to postpone effective retirement. In other words, in the age groups younger than the general retirement age (65-year-olds) a smaller share than previously of the whole age group would retire. To measure changes in the actual effective retirement age, better tools are needed. These tools are used both to monitor the development and to support decision-making. Previously we have used mainly the median and the average retirement age.

Due to the ageing Finnish population the average age of those who retire also increases even if the retirement risk for each age group would not change. For instance the average age of those who will retire will increase in the period 2002 – 2010 by about one year, according to the estimates of the Finnish Centre for Pensions. This change is primarily due to the post-war baby-boomers nearing retirement age.

To follow up retirement the Finnish Centre for Pensions has developed a new indicator, the expected effective retirement age. In this paper we will refer to this concept as the expectancy. It meets the targets set for a good indicator. It reacts to the retirement risk immediately and in the right direction, and it is independent of the age structure of the population. The indicator is used to monitor the achievement of the objective to increase the effective retirement age.

This report is based on a larger one written in Finnish (Kannisto, Klaavo, Rantala & Uusitalo, 2003). It focuses on methodological issues and gives substantial findings and interpretations less attention than the report in Finnish.

2. CONCEPTS USED

The effective retirement age is described by three indicators: **the expected effective retirement age**, **the median** and **the average retirement age**. The formula for calculating the expected effective retirement age will be explained in this report. The median age is the middle-most observation, i.e. fifty per cent of those retired are younger than this and fifty per cent are older. The average retirement age is the arithmetic mean of the ages of the retired persons. When calculating the median and the average retirement age, the age at the start of the pension is used.

The numbers presented describe the effective retirement age in different ways and are thus suitable for different purposes. Therefore it is justifiable to publish all three numbers also in the future. For instance international comparisons usually use the average. The average is also a number everyone knows and understands, and therefore is also often requested. On the other hand, since the distribution of the effective retirement age is very skew, the middle-most observation, i.e. the median, describes a very typical effective retirement age. The expectancy in its turn best describes the changes over time in the effective retirement age.

Persons having retired on an earnings-related pension are persons whose pension has started during the year and who have not received a pension from this scheme for at least the two previous years. The pensions included are the pensions based on the person's own work history, not survivors' pensions or part-time pensions. The persons retired on an old-age pension include only persons who have retired directly on an old-age pension.

Insured persons within the earnings-related pension scheme are persons covered for pension benefits who do not currently receive any pension based on the person's own work history (excluding part-time pensions). When determining the insured population, the situation at the end of the previous year is used.

The Finnish pension system consists mainly of the national pension scheme and the statutory earnings-related pension scheme as well as statutes for certain special types of risks (e.g. motor liability or workers' compensation insurance). The earnings-related pension scheme covers everyone who has worked as an employee or as a self-employed person or farmer.

At the end of 2003 pensions were paid from the earnings-related pension scheme to over 90% of all pension recipients. Correspondingly, over 95% of those who retired during 2003 received an earnings-related pension.

The earnings-related pension scheme consists of the private and the public sector. Of the persons insured for earnings-related pension benefits about three fourths works in the private sector and about every third in the public sector. Some persons are working in both sectors.

3. THE NEW INDICATOR

When designing the indicator for the effective retirement age the aim was to create an indicator based on the retirement risk which would react immediately and in the right direction to changes in the retirement risk and only in the retirement risk and not in the number of new pensions. Such an indicator would be independent of the age structure of the population.

The indicator is comparable to the indicator for life expectancy. Life expectancy means the number of years that a person would live if the mortality rate for each age group stays unchanged.

Correspondingly the expectancy describes the average effective retirement age for a person of a specific age on the condition that the age-specific retirement risks and the mortality rates stay at the level of the year of observation. The effect of mortality on the expectancy is slight.

The expectancy can be calculated for a person at any age, but the Finnish Centre for Pensions calculates it for both 25-year-olds and 50-year-olds. The expectancy for a 25-year-old reflects mainly the whole population which is insured for earnings-related pension benefits, since at that age participation in working life begins to stabilise. It is very rare to retire earlier than as a 25-year-old. In figure 4 the expectancy for every age between 25 and 65 has been shown.

Of those retiring, about 15 percent are less than 50 years old. Illnesses and injuries in this group often prevent working. Calculating the expectancy for 50-year-olds is needed because pension policy is most effective beyond this age.

The expectancy is the average effective retirement age calculated for the insured of a certain age when the retirement risk and mortality risk for each age group remain at the level of the year of observation.

The expectancy is calculated in the way that the mortality risk and the retirement risk of the insured are calculated for each age group. Using these proportions we calculate how many insured would retire within a year from a group of a chosen size and age (for instance 100,000 25-year-olds). The number of insured remaining at a one year higher age is obtained by subtracting from the original number those who have retired and the number of deceased calculated from the mortality rates. Continuing in this way age by age until the retirement age for an old-age pension, the calculated numbers of those retiring are obtained for each age group. The average age calculated from these assumed retirements is the expectancy (i.e. the expected effective retirement age).

Equation:

The proportion of persons retiring at age j is obtained from the equation:

$$A_j = e_j \prod_{k=m}^{j-1} (1 - e_k - y_k)$$

and the expectancy is the weighted average of ages:

$$E_m = \left(\sum_{j=m}^{65} j A_j\right) / \sum_{j=m}^{65} A_j$$

e_j = retirement risk at age *j*

y_j = mortality risk at age *j*

m = chosen starting age

In Finland the general retirement age is 65 years.

4. PROPERTIES OF THE INDICATOR

Several requirements were set for this new indicator:

- The indicator should react in a correct way to changes in the retirement risk. It decreases when the retirement risk increases in some younger age group under 65 and increases when the retirement risk decreases in these age groups.
- The indicator may react only to changes in the retirement risk. It must not be affected by changes in population i.e. such as the age structure of the population.
- The indicator should react immediately to changes in the retirement risk. When the calculations are based on the number of new pensions (inflow), the indicator reacts immediately to changes in the retirement risk. If the calculations were made on the basis of the number of retired (stock), the changes would be seen only slowly in the results.
- Adequate statistics should be available. In Finland the Finnish Centre for Pensions maintains a central register of all statutory earnings-related pensions and pension insurance policies, which makes calculations based on the retirement risks possible.

The expectancy does meet well these aforementioned basic criteria! On the other hand, a further criterion is international comparability. In many countries it is probably difficult to obtain the data. We know that Rikstrygdeverket in Norway calculates the effective retirement age in a corresponding way (Rikstrygdeverket, 2001), i.e. using a formula based on life expectancy, as does the studies of the Swedish “senior 2005” project (Svensson, 2003). However, the calculation formula is not quite the same, but the main principle is.

It is not very useful to calculate the expectancy for a small population, because the number of new pensions in each age group in the population should reflect the probability of retirement. This criterion already requires such a large population that for instance calculating the expectancy for the personnel of a single company is not useful (an exception may be the largest companies in Europe).

The effective retirement age can also be approached by looking at exits from working life. Measuring the average age for exiting working life (average exit age, effective average exit age) entails similar problems as those involved in measuring the effective retirement age. When comparing these indicators internationally several calculation modes are used, and in Finland these have been compared especially by Nio and Hytti (2004).They have ended up recommending a calculation mode where a similar way of thinking as in the expected effective retirement age (expectancy) can be found in the background.

5. MAIN RESULTS

Expected effective retirement ages (expectancies) for the whole earnings-related pension scheme can currently be calculated for the years 1996-2003. During these years the expectancy calculated for 25-year-olds has stayed more or less the same. In 2003 the expectancy was 58.9 years.

On the other hand, the expectancy calculated for 50-year-olds has increased by six months over the same period. In 2003 the expectancy for 50-year-olds was 60.9 years. Retirement between the ages of 25 and 49 thus affects the expectancy by a couple of years for all persons retired on an earnings-related pension.

In the private sector the expectancy is higher than in the public sector. In the public sector the expectancy calculated for 25-year-olds has decreased by nearly six months.

The expectancies for women and for men differ only slightly from each other. The expectancy calculated for 25-year-olds has been about six months lower for men than for women. The expectancy calculated for 50-year-olds is almost the same for both genders.

All in all the change in the expectancy after 1996 has been small. However, the longer time series for the private sector shows significant changes for earlier years. At the beginning of the 1980s the expectancy was 58.5 years. The individual early retirement pension and the early old-age pension, which were introduced in the private sector from the beginning of 1986, caused the expectancy to plummet to 56.6 years. After that it started increasing. The temporary decrease in 1992 was due to legislative changes. At the time a new age group became entitled to an unemployment pension, and a 2.5-fold higher number of private-sector employees retired on an unemployment pension than the year before. The expectancy was at its highest in 1998, at 59.5 years. After that the increase has slowed down.

In 1983 the expectancies calculated for 25-year-olds in the private sector were twelve months higher for women than for men. Over the following about twenty years the difference has shrunk to six months.

REFERENCES

Kannisto J., Klaavo T., Rantala J. and **Uusitalo H.** (2003). Missä iässä eläkkeelle? Raportti työeläkkeelle siirtymisen iästä ja sen mittaamisesta. Eläketurvakeskuksen raportteja 32.

Nio I, Hytti H. (2004). Työllisyysohjelman seuranta ja työssäoloajan pituus. Työpoliittinen aikakauskirja 1/2004. Pp 51-80.

Rikstrygdeverket, Utredningsavdelningen (2001). Forventet pensjoneringsalder i Norge 1995 - 2000. Trygdeetaten Rapport 04/2001

Svensson I. (2003). Olika sätt att belysa om fattningen av de äldres deltagande i arbetslivet; Riksförsäkringsverket, Äldrepolitik för framtiden, bilaga B, kortversion av slutbetänkande av den parlamentariska äldre beredringen senior 2005.

List of charts

List of tables

Figure 1 Expected effective retirement age (i.e. expectancy) in 1996 - 2003
All persons retired on an earnings-related pension

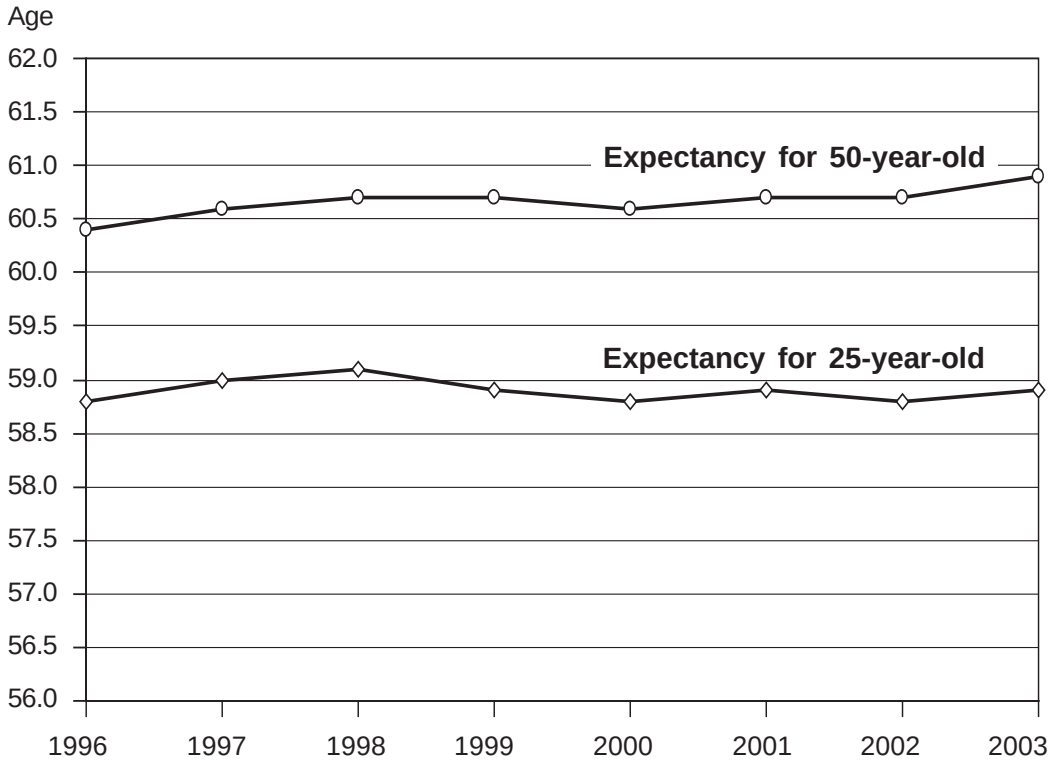

Figure 1a Expected effective retirement age (i.e. expectancy) in 1983 - 2003
Persons retired from the private sector

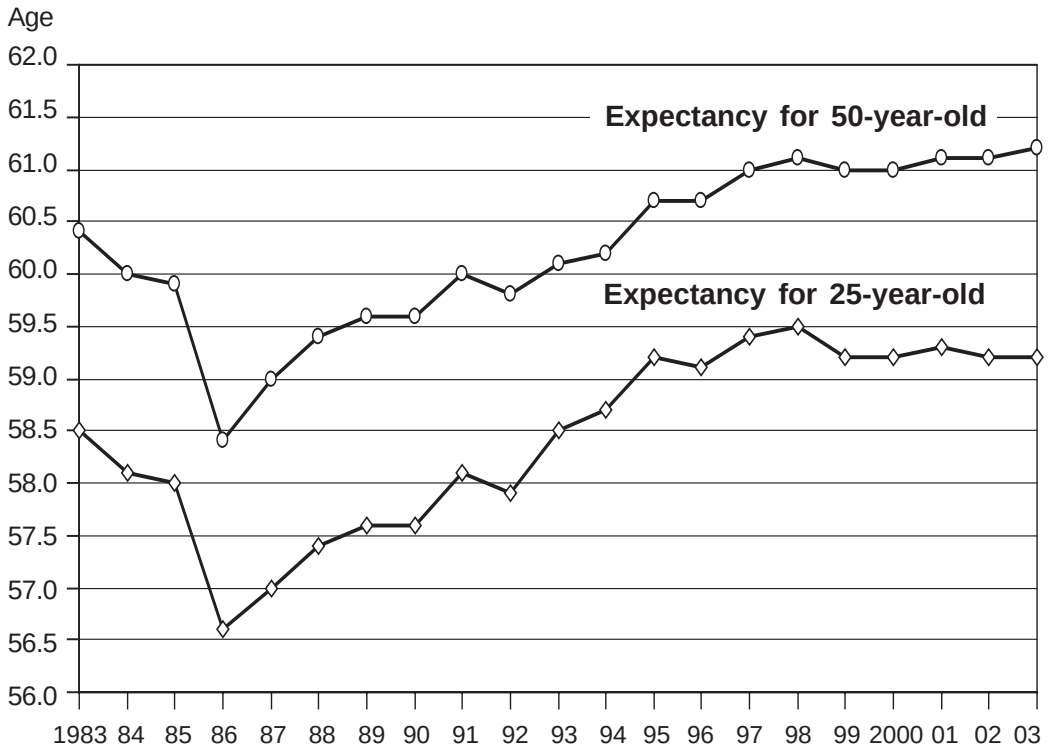

Figure 2 Expected effective retirement age (i.e. expectancy) according to gender in 1996 - 2003

All persons retired on an earnings-related pension

Figure 2a Expected effective retirement age (i.e. expectancy) according to gender in 1983 - 2003

Persons retired from the private sector

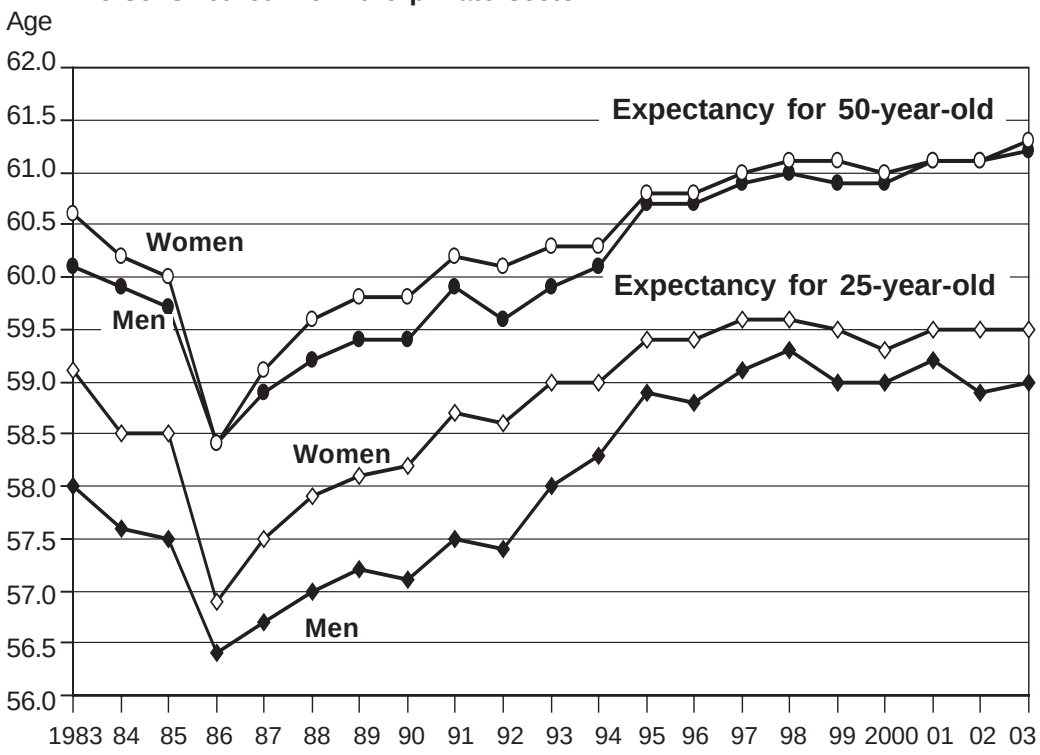

Figure 3 Expected effective retirement age (i.e. expectancy), average and median in 1996 - 2003

All persons retired on an earnings-related pension

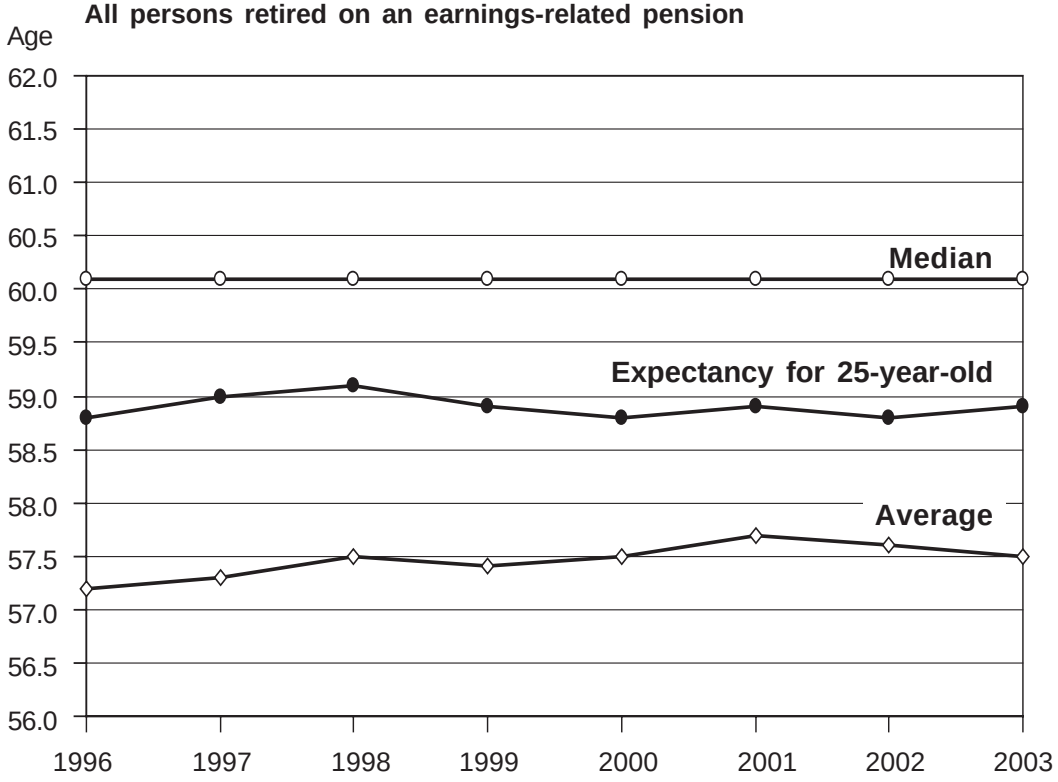

Figure 3a Expected effective retirement age (i.e. expectancy), average and median in 1983 - 2003

Persons retired from the private sector

Figure 4 Expected effective retirement age (i.e. expectancy) according to age in 2003

All persons retired on an earnings-related pension

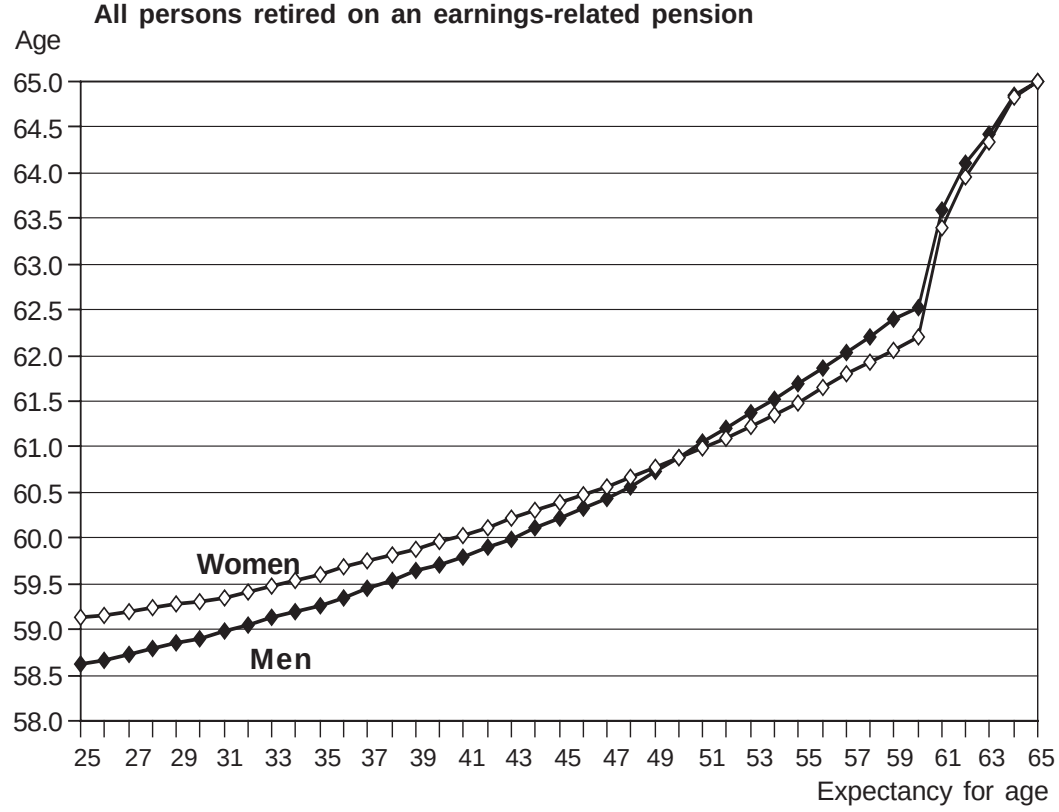

Figure 5 Persons insured for earnings-related pension benefits according to age in 2003

In 2003 there were in total 2,547,000 persons aged 25 - 64 who were insured for earnings-related pension benefits.

Figure 6 Persons retired on an earnings-related pension in 2003 according to age group

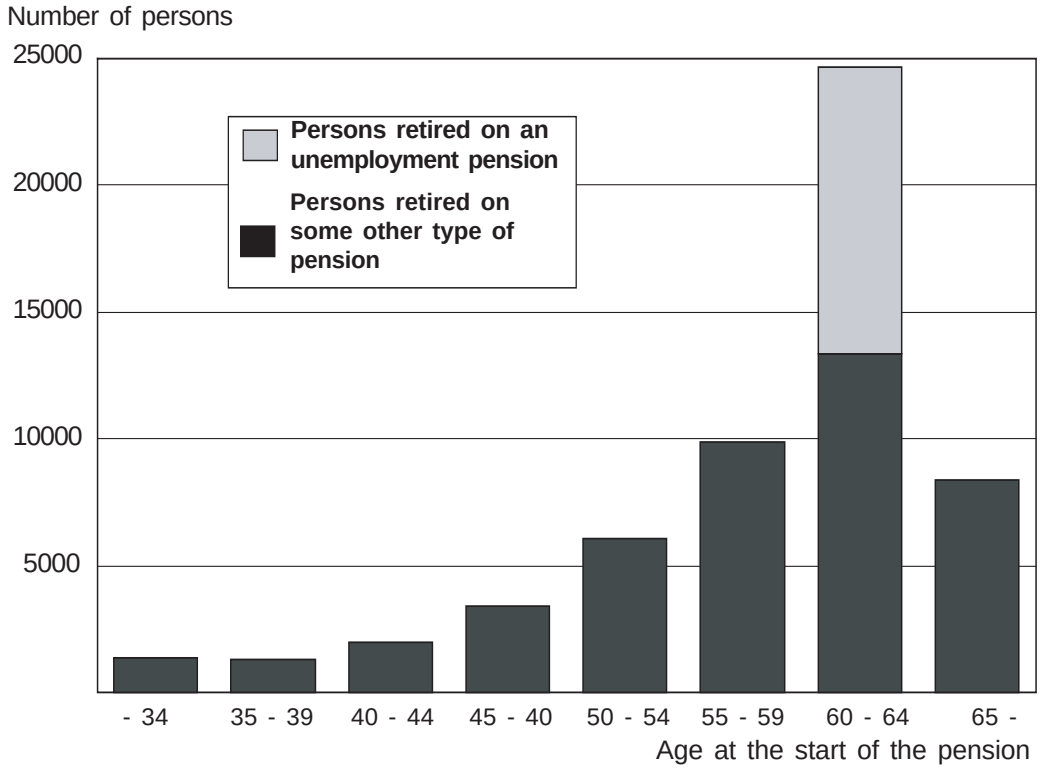

Figure 6a Persons aged over 50 years and having retired on an earnings-related pension in 2003 according to age

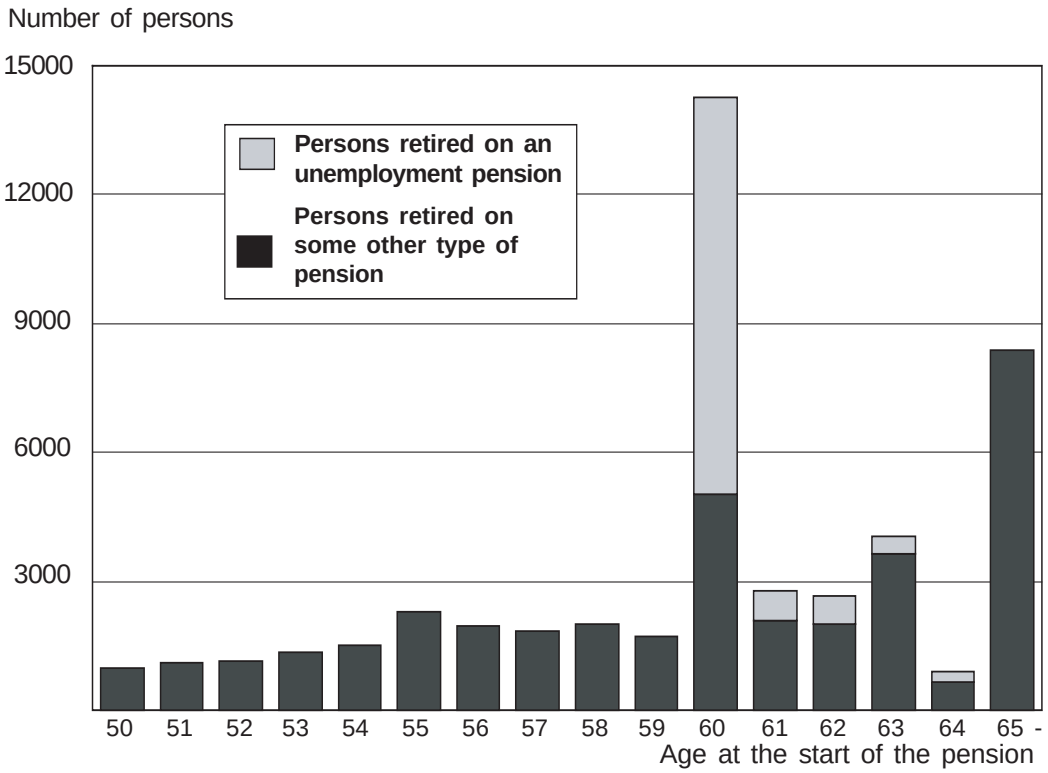

Table 1 Expected effective retirement age (i.e. expectancy) for 25-year-olds and for 50-year-olds

	Calculated from age 25			Calculated from age 50		
	Men	Women	Total	Men	Women	Total
	All persons retired on an earnings-related pension					
1996	58.5	59.1	58.8	60.3	60.4	60.4
1997	58.7	59.2	59.0	60.6	60.6	60.6
1998	58.9	59.3	59.1	60.7	60.7	60.7
1999	58.7	59.1	58.9	60.6	60.7	60.7
2000	58.6	58.9	58.8	60.6	60.6	60.6
2001	58.9	59.0	58.9	60.8	60.7	60.7
2002	58.5	59.0	58.8	60.7	60.7	60.7
2003	58.6	59.1	58.9	60.9	60.9	60.9
	Persons retired on a private-sector pension					
1983	58.0	59.1	58.5	60.1	60.6	60.4
1984	57.6	58.5	58.1	59.9	60.2	60.0
1985	57.5	58.5	58.0	59.7	60.0	59.9
1986	56.4	56.9	56.6	58.4	58.4	58.4
1987	56.7	57.5	57.0	58.9	59.1	59.0
1988	57.0	57.9	57.4	59.2	59.6	59.4
1989	57.2	58.1	57.6	59.4	59.8	59.6
1990	57.1	58.2	57.6	59.4	59.8	59.6
1991	57.5	58.7	58.1	59.9	60.2	60.0
1992	57.4	58.6	57.9	59.6	60.1	59.8
1993	58.0	59.0	58.5	59.9	60.3	60.1
1994	58.3	59.0	58.7	60.1	60.3	60.2
1995	58.9	59.4	59.2	60.7	60.8	60.7
1996	58.8	59.4	59.1	60.7	60.8	60.7
1997	59.1	59.6	59.4	60.9	61.0	61.0
1998	59.3	59.6	59.5	61.0	61.1	61.1
1999	59.0	59.5	59.2	60.9	61.1	61.0
2000	59.0	59.3	59.2	60.9	61.0	61.0
2001	59.2	59.5	59.3	61.1	61.1	61.1
2002	58.9	59.5	59.2	61.1	61.1	61.1
2003	59.0	59.5	59.2	61.2	61.3	61.2
	Persons retired on a public-sector pension					
1996	59.1	59.3	59.2	60.8	60.6	60.7
1997	58.9	59.3	59.2	60.9	60.8	60.8
1998	59.0	59.3	59.2	61.0	60.9	60.9
1999	58.8	59.1	59.0	60.9	60.9	60.9
2000	58.2	58.8	58.6	60.4	60.6	60.5
2001	58.6	59.0	58.8	60.7	60.7	60.7
2002	58.2	59.0	58.6	60.5	60.7	60.6
2003	58.3	59.0	58.8	60.8	60.9	60.8

Table 2 Expected effective retirement age (i.e. expectancy), average and median

	Men			Women			Total		
	Expectancy	Average	Median	Expectancy	Average	Median	Expectancy	Average	Median
	All persons retired on an earnings-related pension								
1996	58.5	56.6	60.1	59.1	57.9	60.1	58.8	57.2	60.1
1997	58.7	56.7	60.1	59.2	57.9	60.1	59.0	57.3	60.1
1998	58.9	57.1	60.1	59.3	57.9	60.1	59.1	57.5	60.1
1999	58.7	57.0	60.1	59.1	57.8	60.1	58.9	57.4	60.1
2000	58.6	57.1	60.1	58.9	57.9	60.1	58.8	57.5	60.1
2001	58.9	57.3	60.1	59.0	58.1	60.1	58.9	57.7	60.1
2002	58.5	57.1	60.1	59.0	58.1	60.1	58.8	57.6	60.1
2003	58.6	57.1	60.1	59.1	57.9	60.1	58.9	57.5	60.1
	Persons retired on a private-sector pension								
1983	58.0	..	..	59.1	..	..	58.5	58.1	60.1
1984	57.6	..	..	58.5	..	..	58.1	57.5	59.3
1985	57.5	..	..	58.5	..	..	58.0	58.0	59.4
1986	56.4	..	..	56.9	..	..	56.6	58.3	59.8
1987	56.7	..	..	57.5	..	..	57.0	57.9	59.7
1988	57.0	..	..	57.9	..	..	57.4	57.4	59.3
1989	57.2	..	..	58.1	..	..	57.6	57.2	59.1
1990	57.1	..	..	58.2	..	..	57.6	57.0	58.8
1991	57.5	..	..	58.7	..	..	58.1	57.0	59.1
1992	57.4	..	..	58.6	..	..	57.9	57.4	60.1
1993	58.0	..	..	59.0	..	..	58.5	58.0	60.1
1994	58.3	..	..	59.0	..	..	58.7	57.8	60.1
1995	58.9	..	..	59.4	..	..	59.2	57.5	60.1
1996	58.8	57.0	60.1	59.4	58.2	60.1	59.1	57.6	60.1
1997	59.1	57.1	60.1	59.6	58.3	60.1	59.4	57.7	60.1
1998	59.3	57.4	60.1	59.6	58.2	60.1	59.5	57.8	60.1
1999	59.0	57.2	60.1	59.5	58.0	60.1	59.2	57.6	60.1
2000	59.0	57.4	60.1	59.3	58.2	60.1	59.2	57.8	60.1
2001	59.2	57.6	60.1	59.5	58.4	60.1	59.3	58.0	60.1
2002	58.9	57.4	60.1	59.5	58.4	60.1	59.2	57.8	60.1
2003	59.0	57.6	60.1	59.5	58.4	60.1	59.2	58.0	60.1
	Persons retired on a public-sector pension								
1996	59.1	56.5	60.1	59.3	57.4	60.1	59.2	57.0	60.1
1997	58.9	56.3	60.1	59.3	57.3	60.1	59.2	56.9	60.1
1998	59.0	56.6	60.1	59.3	57.5	60.1	59.2	57.1	60.1
1999	58.8	56.6	60.1	59.1	57.3	60.1	59.0	57.0	60.1
2000	58.2	56.6	60.1	58.8	57.3	60.1	58.6	57.0	60.1
2001	58.6	57.1	60.1	59.0	57.8	60.1	58.8	57.5	60.1
2002	58.2	56.9	60.1	59.0	57.8	60.1	58.6	57.4	60.1
2003	58.3	56.8	60.1	59.0	57.5	60.1	58.8	57.2	60.1

The table uses the expectancy for 25-year-olds.

Table 3 Persons retired on an earnings-related pension according to pension benefit

	Old-age pension		Un-employ-ment pension	Disability pension		Special pensions for farmers	**All persons having retired**	Persons retired on a part-time pension
	Total	Early old-age pen.		Total	Indiv.early ret.pension			
	All persons retired on an earnings-related pension							
1996	13694	2639	11134	20694	3746	2672	**47606**	2015
1997	14252	2780	11786	19835	2934	1574	**46971**	2298
1998	14969	2727	13391	19577	2585	1642	**49198**	5707
1999	15969	2895	12835	21891	2843	2286	**52578**	9547
2000	16999	3590	12853	22839	2618	1492	**53667**	9455
2001	18769	4114	14784	23325	2686	1263	**57691**	8995
2002	19564	4152	11505	25223	2685	1273	**57211**	16114
2003	19106	4208	11278	25885	2255	1004	**56979**	8232
Persons aged 55 - 64 (Age at the start of the pension)								
1996	8317	2639	11134	9510	3746	2672	**31039**	2015
1997	8791	2780	11786	8607	2934	1574	**30271**	2298
1998	9211	2727	13391	8298	2585	1642	**32150**	5707
1999	9795	2895	12835	9224	2843	2286	**33726**	9547
2000	10226	3590	12853	9587	2618	1492	**33628**	9455
2001	11575	4114	14784	10226	2686	1263	**37386**	8995
2002	11752	4152	11505	11540	2685	1273	**35716**	16114
2003	10397	4208	11278	12133	2255	1004	**34520**	8232
	Persons retired on a private-sector pension							
1996	10939	2926	10721	19274	3391	2672	**43293**	913
1997	11028	3028	11441	18289	2663	1574	**42026**	975
1998	10806	3089	13012	17914	2347	1642	**43114**	2677
1999	11510	3224	12622	20187	2584	2286	**46358**	5505
2000	13296	3894	12604	21156	2444	1492	**48263**	5620
2001	14556	4480	14520	21576	2493	1263	**51652**	5644
2002	15538	4572	11355	23494	2513	1273	**51439**	10113
2003	16566	4195	11143	24037	2075	1004	**52540**	5544
	Persons retired on a public-sector pension							
1996	7861	822	4136	9123	1910	.	**21074**	1109
1997	8329	869	4396	9142	1463	.	**21814**	1331
1998	8914	808	5225	9669	1323	.	**23750**	3052
1999	9621	889	5124	10974	1440	.	**25659**	4061
2000	9901	1159	5459	11685	1248	.	**26957**	3857
2001	11226	1439	6452	11873	1309	.	**29468**	3371
2002	11837	1517	5335	13201	1384	.	**30301**	6048
2003	10820	1624	5520	13636	1090	.	**29897**	2722

As persons who are retired are considered for each type of pension those persons who have not received that type of pension for at least two years. The numbers in the column “All persons having retired” and the numbers of persons having retired on an old-age pension presuppose that the person has received no pension based on the person’s own work history for two years. The numbers for each sector always relate to that sector and the numbers for the whole scheme presuppose that the person has not received a pension from either sector for two years. Thus the numbers in the different parts of the table cannot be added up.

A person retired on a part-time pension is not considered as retired, i.e. those retired on a part-time pension are not included in the numbers for all retired persons. A person drawing a part-time pension is not considered as having retired until changing to some other type of pension based on the person’s own work history, usually an old-age pension.